Strong Authentication with Adaptive Authentication
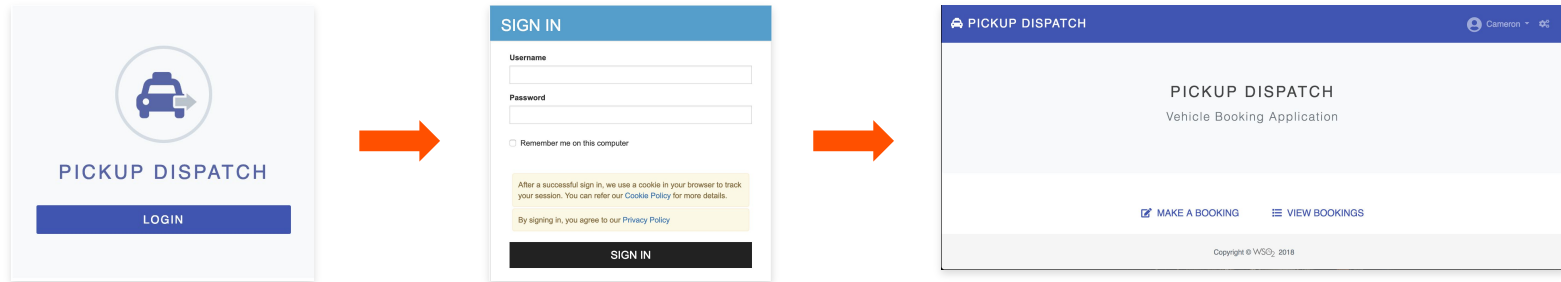
Authentication
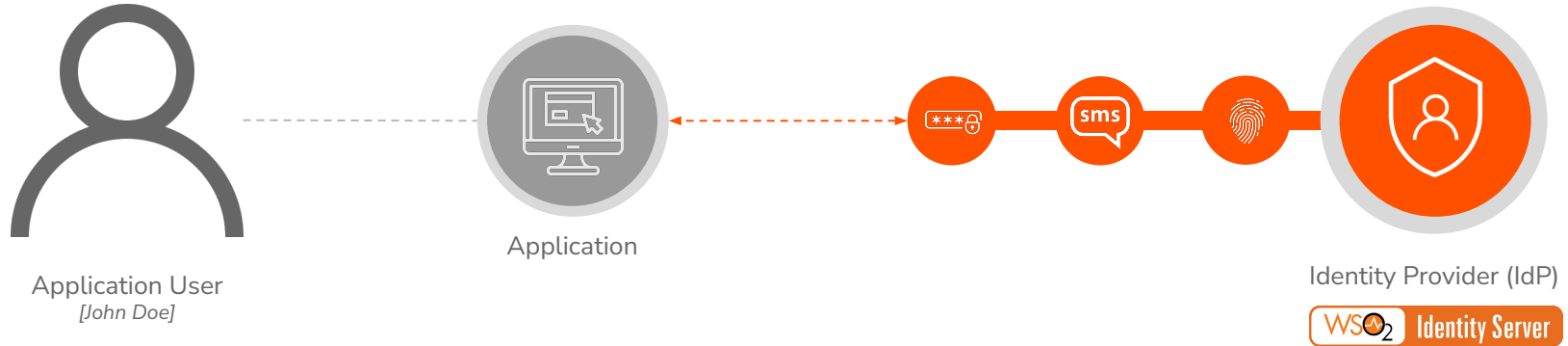
What is Authentication?

- Authentication is the process used to distinctly identify a certain entity using:

  - **Knowledge factor**: Something the user knows, e.g., password, PIN, and security question.

  - **Ownership factor**: Something the user has, e.g., ATM card, identity card, mobile phone, and security token.

  - **Inherence factor**: Something the user is/does, i.e., biometrics.

Authentication Mechanisms Based on the Number of Factors

Authenticating users by challenging with multiple authentication steps

Application User
[John Doe]

Application

Identity Provider (IdP)

Convenience and Security in Multi-Factor Authentication

What to prioritize

Adaptive Authentication

What is Adaptive Authentication

Adjusting the authentication strength based on the user's risk profile and behaviour.
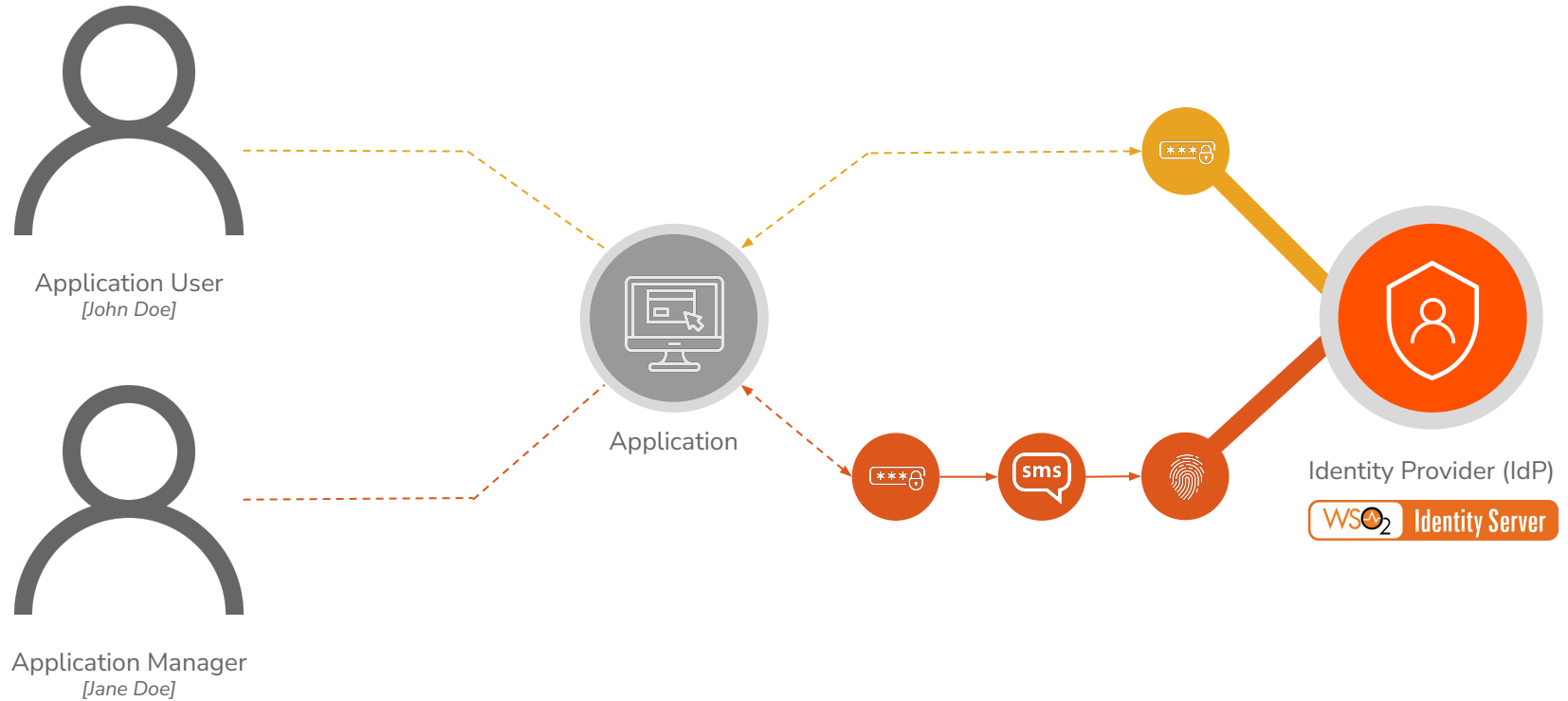
Decision Factors

- Request or environment factors

- User attributes and roles

- The required level of assurance (LoA)

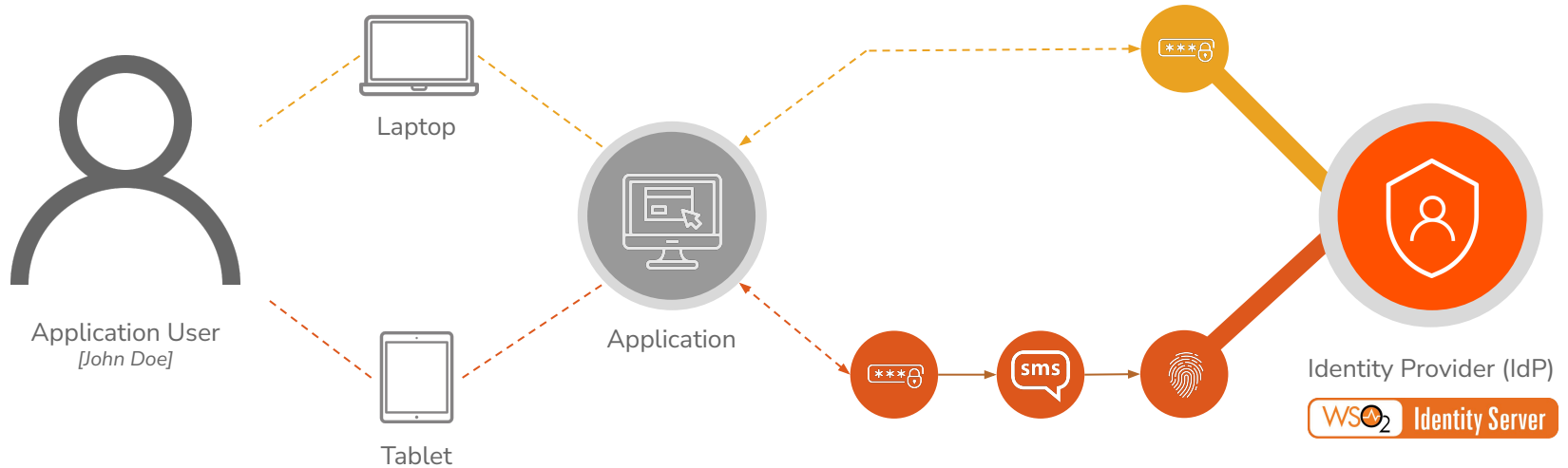- User behavior

- Analytics and machine learning
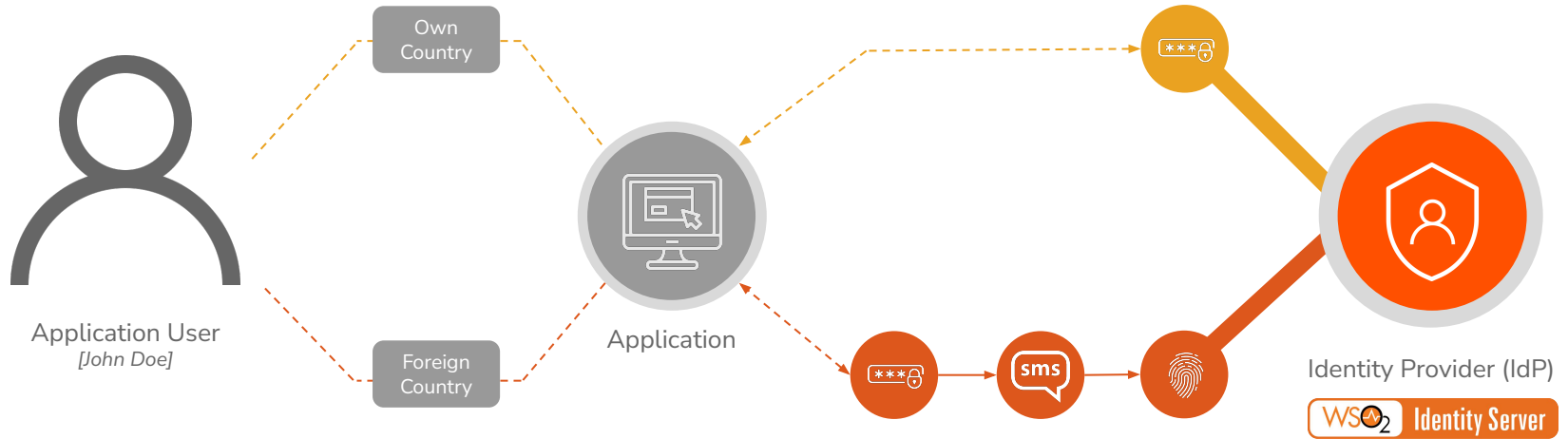
- And more …

Adaptive Authentication Scenarios

Role–Based Adaptive Authentication

Device–Based Adaptive Authentication

Laptop

Tablet

Application User
[John Doe]

Application

Identity Provider (IdP)

WSO2 Identity Server

sms

IP-Based or Location-Based Adaptive Authentication

Own Country

Foreign Country

Application User
[John Doe]

Application

Identity Provider (IdP)

sms

WSO2 Identity Server

12

ACR–Based Adaptive Authentication

Balance Inquiry

Application User
[John Doe]

Fund Transfer

Application

sms

Identity Provider (IdP)

WSO₂ Identity Server
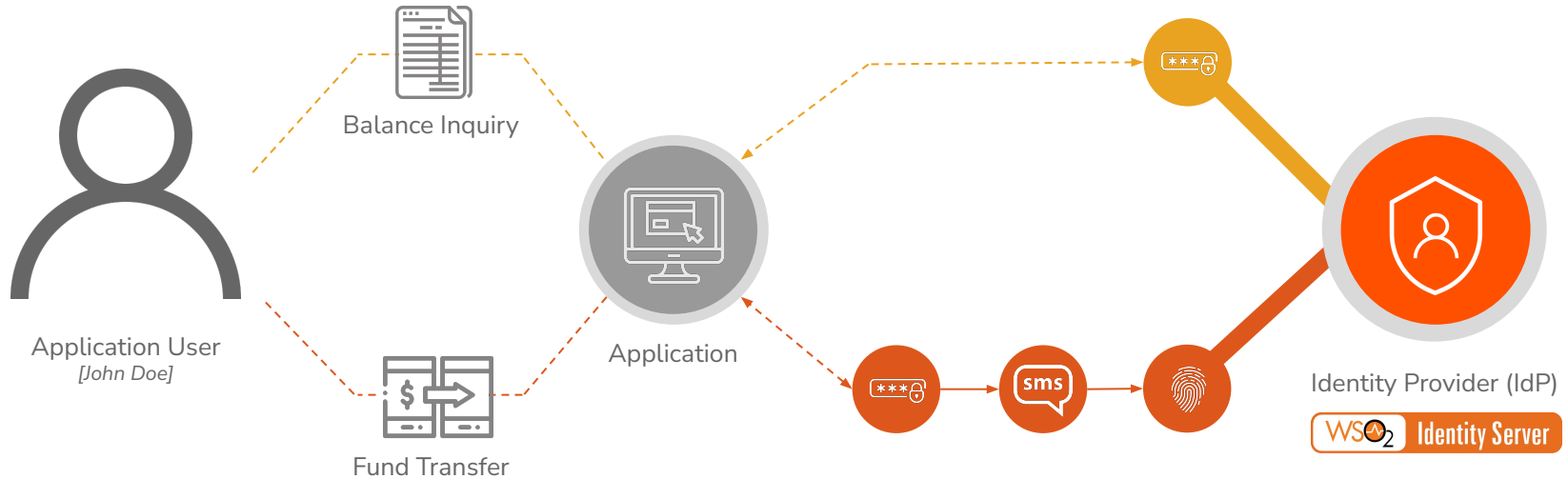
ELK Analytics–Based Adaptive Authentication

Risk Analyzer

elasticsearch

Low Risk

Application User
[John Doe]
(no recent large transactions)

Fund Transfer

Application User
[Jane Doe]
(transferred >$10k within last 5 minutes)

Fund Transfer

Application

Risk Analyzer

elasticsearch

High Risk

sms

Identity Provider (IdP)

WSO2 Identity Server
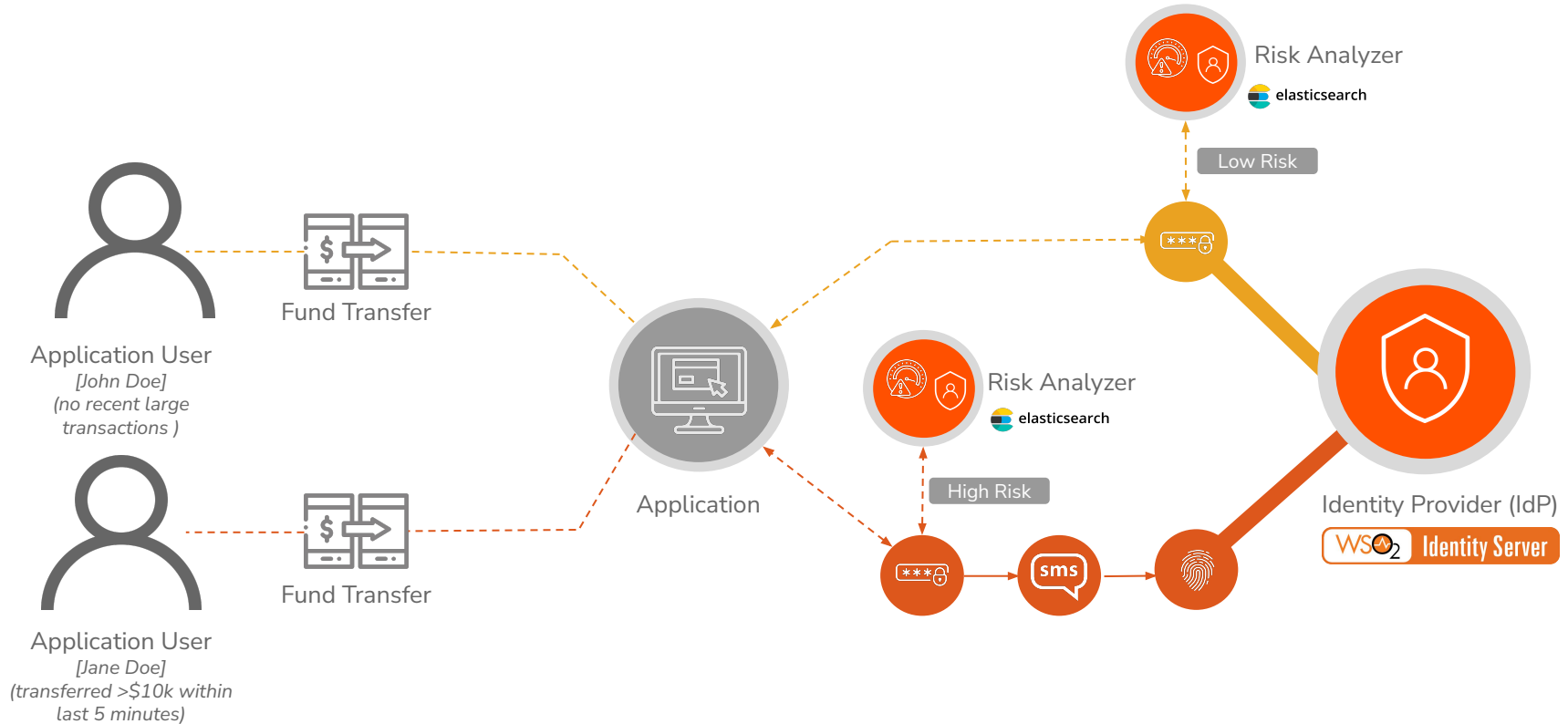
TypingDNA–based Adaptive Authentication

Pattern match

Pattern mismatch

Application User
[John Doe]

Application

Identity Provider (IdP)

WSO2 Identity Server
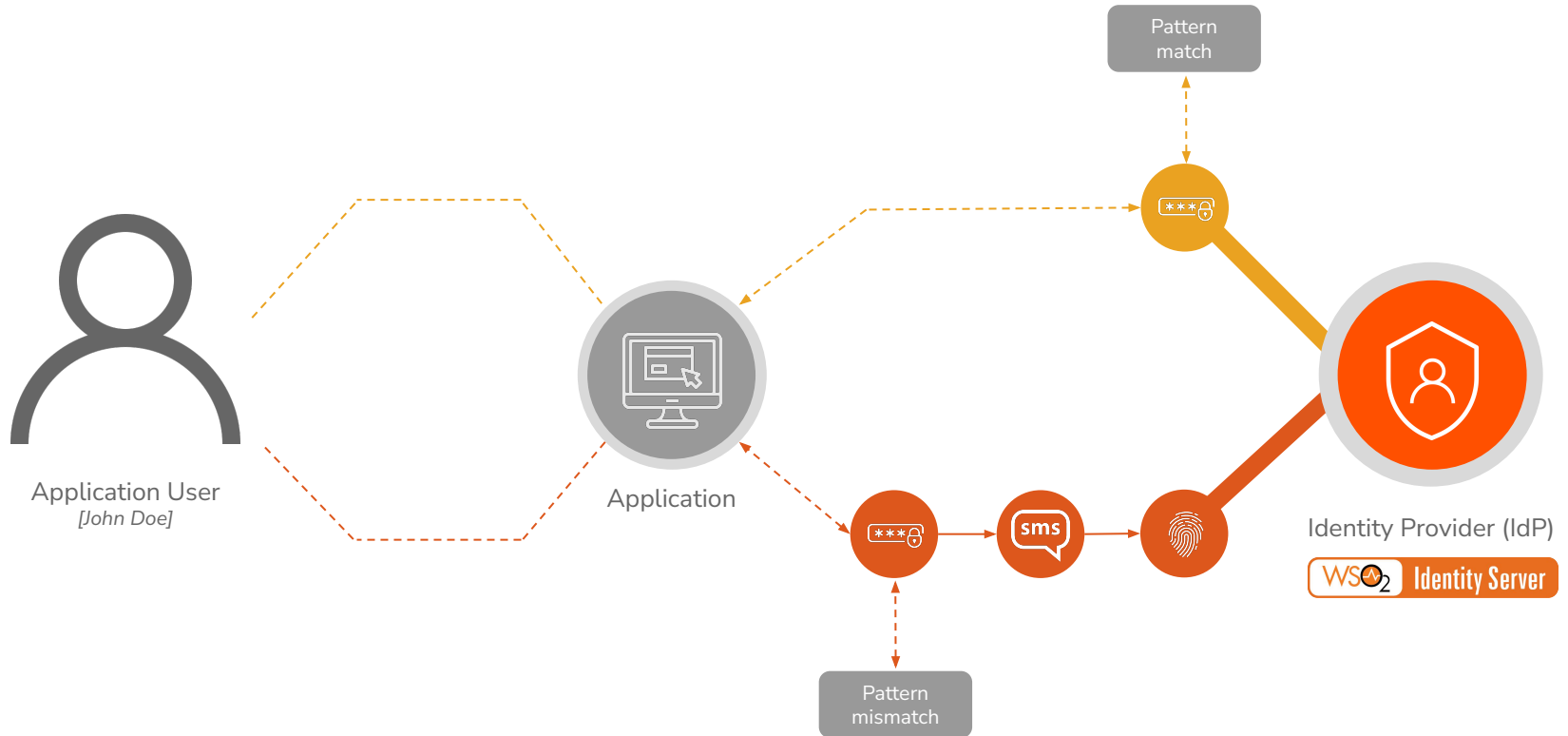
Quick Recap

What you learnt

1. About authentication

2. Benefits of using adaptive authentication

3. Adaptive authentication decision factors

4. Adaptive authentication scenarios

Any Questions ?

Reach us through the following channels

✉ iam-dev@wso2.org

https://stackoverflow.com/questions/tagged/wso2-identity-server

https://discord.com/invite/Xa5VubmThw

Thanks!

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